1. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$\log_2\left(-2x+8\right)+4=3$$

    A. $x \in [3.7, 3.78]$

    B. $x \in [-4.59, -4.19]$

    C. $x \in [-0.12, 0.17]$

    D. $x \in [3.36, 3.51]$

    E. There is no Real solution to the equation.

2. Solve the equation for x and choose the interval that contains x (if it exists).
$$25 = \ln \sqrt[5]{\frac{9}{e^{8x}}}$$

    A. $x \in [-5.98, -2.98]$

    B. $x \in [13.35, 17.35]$

    C. $x \in [-3.29, -1.29]$

    D. There is no Real solution to the equation.

    E. None of the above.

3. Which of the following intervals describes the Range of the function below?
$$f(x) = -\log_2\left(x-2\right)+6$$

    A. $(-\infty, a), a \in [4.6, 6.6]$

    B. $[a, \infty), a \in [0.9, 2.9]$

    C. $[a, \infty), a \in [-4.7, -1.7]$

    D. $(-\infty, a), a \in [-9.9, -3.8]$

    E. $(-\infty, \infty)$

4. Which of the following intervals describes the Range of the function below?

$$f(x) = -e^{x+2} - 2$$

  A. $(-\infty, a), a \in [-7, 0]$

  B. $(-\infty, a], a \in [-7, 0]$

  C. $[a, \infty), a \in [0, 5]$

  D. $(a, \infty), a \in [0, 5]$

  E. $(-\infty, \infty)$

5. Solve the equation for x and choose the interval that contains x (if it exists).

$$12 = \sqrt[3]{\frac{12}{e^{3x}}}$$

  A. $x \in [-1.86, -1.15]$

  B. $x \in [-13.34, -12.38]$

  C. $x \in [-1.4, -0.25]$

  D. There is no Real solution to the equation.

  E. None of the above.

6. Which of the following intervals describes the Domain of the function below?

$$f(x) = -e^{x-2} + 7$$

  A. $(-\infty, a], a \in [1, 8]$

  B. $(-\infty, a), a \in [1, 8]$

  C. $(a, \infty), a \in [-7, -3]$

  D. $[a, \infty), a \in [-7, -3]$

  E. $(-\infty, \infty)$

7. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$5^{2x+5} = \left(\frac{1}{9}\right)^{3x+4}$$

A. $x \in [0.9, 2.6]$

B. $x \in [16.4, 18]$

C. $x \in [-1.1, 0.2]$

D. $x \in [-3.3, -1.3]$

E. There is no Real solution to the equation.

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8. Which of the following intervals describes the Domain of the function below?

$$f(x) = -\log_2 (x - 8) + 3$$

A. $(-\infty, a), a \in [-10, -7.3]$

B. $(-\infty, a], a \in [-5.4, 0.1]$

C. $(a, \infty), a \in [7.7, 11.6]$

D. $[a, \infty), a \in [-0.2, 3.5]$

E. $(-\infty, \infty)$

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9. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$2^{2x-2} = \left(\frac{1}{343}\right)^{3x-5}$$

A. $x \in [2.9, 3.2]$

B. $x \in [-31.8, -30.1]$

C. $x \in [0.1, 1.7]$

D. $x \in [-0.6, 0.9]$

E. There is no Real solution to the equation.

10. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_2\left(-2x+6\right)+4=2$$

A. $x \in [0.59, 1.84]$

B. $x \in [1.64, 4.82]$

C. $x \in [0.59, 1.84]$

D. $x \in [-6.08, -3.89]$

E. There is no Real solution to the equation.